SPECIAL COMMUNICATION

Mandate for creation of a national peripheral arterial disease public awareness program: An opportunity to improve cardiovascular health

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Background: **There has been increasing recognition of the detrimental effect of peripheral arterial disease (PAD) on the health of Americans, and yet there is no common national program of public PAD education designed to diminish this effect.**

Format: **To heighten awareness of this problem, a 2-day PAD Public Education Strategy Meeting was recently attended by representatives of 17 professional societies and public health associations whose missions support the prevention, diagnosis, treatment, and rehabilitation of vascular diseases. This Public Education Strategy Meeting was intended to provide the rationale and structure to create a national PAD public awareness campaign to diminish the health effect of PAD and to improve cardiovascular outcomes in the United States. This document (1) provides the rationale for creation of a national PAD public education program; (2) reviews the development and success of national hypertension, hypercholesterolemia, and Women's Heart Health public education programs as models of educational efficacy; (3) elucidates how the work of many vascular professionals has led to a national consensus for creation of a national PAD public educational program; (4) provides an overview of the National Heart, Lung, and Blood Institute PAD education meeting; and (5) outlines the "next steps" required to accomplish these goals.**

Outcome: **This meeting achieved consensus that we share responsibility for developing accurate, unified messages to promote PAD awareness and improved care. Participants agreed that the creation of such messages should be linked to plans to disseminate them to all Americans at risk. A consensus was reached that such messages, when commonly created and offered to the public, are most likely to achieve the rewards in better health that all Americans deserve. The Vascular Disease Foundation, a not-for-profit foundation whose mission includes public education about the prevention, diagnosis, treatment, and rehabilitation of PAD, will devote its resources to guide a new coalition in this process and to create a national PAD awareness campaign. During 2003 and 2004, the coalition will create the organizational underpinnings and time line for what will undoubtedly be a multiyear effort.**

Conclusion: **Participants of the Public Education Strategy Meeting agreed to create a broad coalition to develop a National PAD Public Awareness Program, with the objectives to develop and disseminate public education massages on PAD. A successful national PAD education program will contribute to creation of a broader mandate to improve global cardiovascular health in the United States. (J Vasc Surg 2004;39:474-81.)**

Over the past decade, there has been increasing recognition of the major detrimental effect of peripheral arterial disease (PAD) on the health of Americans. To heighten awareness of this problem, a 2-day PAD Public Education Strategy Meeting was held in Bethesda, Md, on January 15-16, 2003. The meeting was coordinated by the Vascular Disease Foundation (VDF) and hosted by the National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health. In addition to the NHLBI, it was also attended by representatives of 16 professional societies and public health associations whose missions support the prevention, diagnosis, treatment, and rehabilitation of vascular diseases (Appendix 1, online only). This Public Education Strategy Meeting was intended to provide the rationale and structure to create a national PAD public awareness campaign to diminish the public health effect of PAD and to improve cardiovascular outcomes in the United States.

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RATIONALE FOR NATIONAL CARDIOVASCULAR PUBLIC EDUCATION PROGRAMS

National public awareness campaigns have successfully contributed to the prevention, early detection, and treatment of many disease states. These educational programs have typically focused on major public health problems such as breast cancer, acquired immunodeficiency syndrome (AIDS), and cardiovascular disease. These campaigns have often been created by the synergy that is achieved by the combination of public sector advocacy (eg, not-for-profit foundations) and governmental program support.

A number of successful national public educational programs have been developed to diminish both risk factors and manifestations of cardiovascular disease, in recognition that cardiovascular illnesses are the leading cause of death in the United States. Peripheral arterial disease is one of the three major clinical atherosclerotic syndromes, and its pathogenesis is a consequence of common risk factors, such as diabetes, tobacco smoking, hypertension, and hypercholesterolemia. Moreover, as a major manifestation of cardiovascular disease, it is a potent predictor of myocardial infarction, stroke, and death. Thus, it is logical for PAD to now be an additional target of current and future national educational programs.

The NHLBI now supports five such programs: the National High Blood Pressure Education Program, the National Cholesterol Education Program, the National Heart Attack Alert Program, the Obesity Education Initiative, and the Women's Heart Health Education Initiative. From these initiatives, the American public has achieved real benefit. As a result of these programs, individuals now know about the importance of (1) measuring and lowering their blood pressure; (2) measuring and lowering their blood cholesterol; (3) the symptoms of heart attack, allowing more prompt treatment and effective resuscitation from cardiac arrest; (4) the risks of obesity and of a sedentary lifestyle, as well as the benefits of achieving an ideal body weight; and (5) for women, their personal risk of cardiovascular disease and its symptoms.

This document is designed to (1) provide the rationale for creation of a national PAD public education program, (2) review the development and success of national hypertension and hypercholesterolemia public education programs as models of educational efficacy, (3) elucidate how the work of many vascular professionals has led to a national consensus for creation of a national PAD public educational program, (4) provide an overview of the NHLBI PAD education meeting, and (5) outline the "next steps" required to accomplish these goals.

RATIONALE FOR CREATION OF A PAD PUBLIC EDUCATION PROGRAM

PAD is a highly prevalent disease, affecting 8 to 10 million Americans and between 12% and 20% of older adults.[1-3] Individuals with PAD suffer a markedly increased risk of cardiovascular ischemic events that is increased 7- to 10-fold and a short-term mortality that is increased at least 3-fold compared with an age-matched cohort.[4-10] PAD is associated with a major detrimental affect on quality of life.[11-17] Individuals with "asymptomatic" PAD (defined by an ankle-branchial index [ABI] less than 0.9, but the absence of classic claudication) are functionally impaired, as recent data now demonstrate that such individuals suffer a slower walking velocity, poorer standing balance score, and walk fewer blocks per week than comparable individuals without PAD, even after adjustment for age, gender, risk factors, and other comorbidities.[11,18-21] Overall, current data document that asymptomatic PAD is common and is independently associated with impaired lower-extremity functioning. Individuals with claudication suffer a markedly diminished functional status and quality of life. Severe PAD and its end-stage clinical manifestation, critical limb ischemia, is present in approximately 500 individuals per million; between 10% and 30% of patients with critical limb ischemia will suffer a major nonfatal or fatal cardiovascular event over 6 to 12 months after diagnosis; and less than half of patients with critical limb ischemia survive without a major amputation 6 months after presentation.[22] Thus, the high prevalence, functional consequences, cardiovascular ischemic risk, risk of amputation, and associated mortality of PAD place a considerable burden on individuals and on all American communities and consume national health care resources.

Americans at risk of PAD or those who have undiagnosed PAD could best be served by prompt diagnosis.[23] The fraction of individuals at risk who have had an ankle-brachial index measurement, the fraction of individuals with PAD who are being treated with secondary prevention strategies to reduce cardiovascular risk, the fraction with critical limb ischemia who undergo revascularization, and the fraction who have suffered a PAD-related amputation could easily be ascertained. These data are currently not known, and the absence of these data impedes measurement of the efficacy of both clinician and public interventions to improve PAD-associated outcomes. The success of any national PAD awareness campaign would require the application of continuing outcomes assessments to demonstrate the ongoing programmatic value, as has been accomplished in the programs cited earlier. The survey mechanism used in National Health and Nutrition Examination Survey (NHANES) could encompass these additional measures of global atherosclerosis, as they are known to contribute to global cardiovascular health.

A clear public understanding that PAD is one of the strongest markers of cardiovascular risk is critical. Few Americans are now evaluated to determine the presence of PAD, awareness of the diagnosis is low, and the benefits of treatment are not well appreciated.[23-25] Individual clinicians and individual professional societies have successfully promoted the valuable role of the ankle-brachial index measurement to provide accurate PAD detection (Table I). Current data demonstrate that PAD diagnostic and therapeutic interventions can decrease cardiovascular ischemic

Table I. Past peripheral arterial disease public education and screening programs

Program	*Sponsor*	*Date*	*Goals of program*
Step Lively	Hoechst Marion Roussel Pharmaceuticals	1988-1990	Community-based PAD detection by use of the ABI
A Step Ahead	Society for Vascular Nursing	1990-1996	Community-based PAD detection by use of the ABI, educational intervention
Minnesota Peripheral Arterial Disease Screening Program	University of Minnesota	1996-1997	Assessment of efficacy of community PAD detection; risk factor profile assessment; treatment intensity; patient PAD awareness
Legs For Life	Society for Interventional Radiology	1998-present	Raise public awareness and provide screening for PAD, carotid disease, and AAA
PARTNERS Program (Peripheral Arterial Disease Awareness, Risk, and Treatment: New Resources for Survival)	Academic Steering Committee; Bristol Myers-Squibb/ Sanofi-Synthelabo Partnership	1999 data collection; publication in 2001.	Assessment of efficacy of community PAD detection; risk factor profile assessment; treatment intensity; patient and clinician PAD awareness; prospective cross-sectional survey of PAD vs other CV disease prevalence in primary care practice; educational intervention [25]
Save A Leg, Save a Life	Vascular Disease Foundation	1999-present	Web, brochure, and newsletter-based patient educational campaign
American Vascular Association Screening Program	Society for Vascular Surgery and American Association for Vascular Surgery	2001-present	Community-based PAD, AAA, and carotid disease detection by use of the ABI, abdominal ultrasound, and carotid duplex methods; educational intervention

PAD, Peripheral arterial disease; *ABI,* ankle-brachial index; *AAA,* abdominal aortic aneurysm; *CV,* cardiovascular.

event rates, improve quality of life, and prevent amputation.[22,26-29] Pharmacological interventions, exercise, endovascular techniques, and surgical treatments, used individually or together, are known to improve clinical outcomes of individuals with PAD. Despite these advances, these data remain poorly understood by the public. Without a unified program of national PAD education, these data will remain obscure to the public, the expected public health gains will not be realized, and the benefits of our investment in vascular research will not be translated into better health.

EVIDENCE THAT PUBLIC EDUCATION LEADS TO "REAL WORLD" HEALTH BENEFITS

An effective national public education program must be both well conceived to meet a health-related educational need and designed to achieve measurable outcomes. To this end, as we consider the prospects of creating a national PAD public awareness campaign, there is value in assessing how educational goals have previously been accomplished. Central to all of these efforts has been the creation of broad coalitions of public organizations and federal agencies that work collaboratively to create a large, public-focused, data-driven message. Two examples of the diversity of these coalitions are offered in Appendix 2, online only.

Prior to the establishment of a hypertension awareness initiative, few Americans were aware that high blood pressure represents a marker of cardiovascular risk. At the same time, the importance of blood pressure monitoring and treatment of hypertension was not embraced by the medical establishment. Although individual clinicians and some organizations promoted the value of regular blood pressure measurements, and although prospective randomized trials demonstrated that blood pressure–lowering interventions decreased rates of myocardial infarction, stroke, heart failure, end-stage renal disease, and death, these data remained poorly understood by the public until the development of a national program of high blood pressure education. The National High Blood Pressure Education Program (NHBPEP) was established in 1972 by the National Heart, Lung, and Blood Institute. The NHBPEP, as a coalition of 39 major professional, public, and voluntary organizations and 7 federal agencies, has both developed a model for national hypertension education and demonstrated that this program has increased public awareness, prevention, treatment, and control of hypertension. Awareness and treatment of high blood pressure have been sequentially assessed as a component of NHANES. From the 1976-1980 survey (NHANES II) to the 1988-1994 survey (NHANES III), the percentage of Americans who were

aware that they had high blood pressure increased from 51% to 73%.[30] Among persons with hypertension, the fraction of hypertensive individuals who receive treatment also increased from 31% to 55% during that same period. As a final measure of program efficacy, NHANES demonstrated that the fraction of persons with high blood pressure who achieve control to below the 140/90 mmHg target has increased from 10% to 29% from NHANES I to III, confirming the relevance of public education about hypertension. The national program to improve the detection and treatment of hypertension was linked to the publication of peer-reviewed national treatment guidelines.[31] Education of the public, linked to education of clinicians, can result in real-world health gains.

Likewise, public awareness of the risks of hypercholesterolemia was low prior to a major public awareness effort. Serum lipid levels were not routinely obtained, and the benefits of treatment were not well appreciated. Although individual clinicians and some organizations promoted the valuable role of lipid assessments, and although prospective randomized trials demonstrated that cholesterol-lowering interventions decreased cardiovascular ischemic event rates, these data remained poorly understood by the public until the development of a national program of cholesterol education. The National Cholesterol Education Program (NCEP) was initiated by the NHLBI in November 1985. The goal of the NCEP is to reduce illness and death from coronary heart disease in the United States by reducing the fraction of Americans with high blood cholesterol. The NCEP is designed to provide educational efforts directed at both the public and health professionals. Programmatic success has been defined in a series of steps, including the publication of treatment guidelines, such as the most recent report from the NCEP-Adult Treatment Panel III (ATP III) and the promotion of these guidelines, related materials, and tools to both patients at risk and to clinicians in practice.[32] The Cholesterol Awareness Survey of physicians and the public has provided evidence that the percentage of the public who has had their blood cholesterol determined increased from 35% to 75% from 1983 to 1995. Translated to the population at risk, the NCEP has, therefore, helped approximately 70 to 80 million Americans who, once unaware of their blood cholesterol level, have now the basis on which to take action to reduce their cardiovascular risk. In 1995, physicians reported initiating diet and drug treatment at much lower cholesterol levels than in 1983, and office-based care for hypercholesterolemia more closely approximates NCEP recommendations. The efforts of the NCEP and Coordinating Committee member organizations have led to significant improvements in professional and public attitudes, knowledge, and practices about high blood cholesterol and heart disease. The Third National Health and Nutrition Examination Survey (NHANES III) (1988-1994) also demonstrates that the public's intake of saturated fat and total fat has declined and that blood cholesterol levels have dropped. Since 1978, average total cholesterol levels among US adults have fallen from 213 mg/dL to 203 mg/dL, and the prevalence of cholesterol of 240 mg/dL or higher has declined from 26% to 19%. Moreover, coronary heart disease mortality has continued to decline. Taken together, these progress indicators demonstrate that public cholesterol education has had a significant effect. It is known that this effect was directly related to the clinician and public educational interventions from data collected during regional efficacy evaluations of both the Minnesota Heart Survey and the Stanford University–managed Five City Project.[33-36]

INITIAL STEPS ON THE ROAD TO SUCCESS-BUILDING CONSENSUS

The Vascular Disease Foundation (VDF) was created in 1998 to serve as a not-for-profit, public-focused organization to create and disseminate educational information on vascular diseases (www.vdf.org). In less than 5 years, the VDF has grown from a regional PAD-focused public educational association into an interdisciplinary national organization devoted to supporting all aspects of vascular public education. To assure the creation of science-based, credible, and easy-to-understand vascular information, material is written and reviewed by a multidisciplinary committee of vascular health professionals and public members. Primary avenues for information dissemination are by way of printed brochures, public newsletter, attendance at health conventions and other community health programs, and web site that provide relevant information on the broad scope of vascular diseases. The VDF currently includes both members of the public and representatives of eight major vascular professional societies, including the American Association of Cardiovascular and Pulmonary Rehabilitation, American College of Cardiology, Society for Clinical Vascular Surgery, Society for Vascular Medicine and Biology, Society of Interventional Radiology, Society for Vascular Nursing, Society for Vascular Surgery, and Society for Vascular Ultrasound. The professional societies represented within the VDF now include more than 40,000 American health professionals; this represents a powerful coalition. In the development of its strategic plan to provide broad vascular education, the VDF considered that the cardiovascular effect of PAD would serve as the most important critical educational initiative. Achievement of this goal was proposed to be best accomplished in the context of the congressionally mandated *Healthy People 2010* initiative.

Healthy People 2010 is a set of specific health objectives for the United States population to achieve over the first decade of the new century (www.healthypeople.gov). The first goal of *Healthy People 2010* is to help individuals of all ages increase life expectancy and improve their quality of life. The second goal of *Healthy People 2010* is to eliminate health disparities among different segments of the population. Inasmuch as PAD is prevalent, is associated with a high mortality, and decreases quality of life, a public educational focus on PAD directly supports the first goal of *Healthy People 2010.* PAD is underdiagnosed and undertreated in most American populations, whether urban or rural, affecting both genders and all ethnicities; a national

PAD public health campaign, therefore, should aid achievement of the second goal of *Healthy People 2010.* A health disparity exists if education about cardiovascular risk reduction is promoted to those with clinically evident coronary heart disease but not to those with PAD who are at equal cardiovascular risk. Within this framework, the VDF requested an opportunity to collaborate with the NHLBI to consider steps that would best lead to improved public access to accurate information about PAD. These discussions by the VDF and NHLBI were held between 2000 and 2001 and led to creation of the 2003 PAD Public Education Strategy Meeting.

Over the past 2 years, growing interest in PAD and its public health effect generated an additional series of scientific and educational symposia that contributed to the current momentum. In July 2002, the American Heart Association created an "Atherosclerotic Vascular Disease Summit" to review trends in the epidemiology, pathophysiology, diagnosis, and treatment of atherosclerotic peripheral arterial disease. This meeting successfully expanded interest in both public and research-directed initiatives. In August 2002, a "Peripheral Vascular Health Summit," hosted by the Society of Interventional Radiology, was attended by those vascular professional organizations with an interest in PAD. This forum explored ways in which these organizations could work collaboratively to further their common goals. A topic addressed at the summit was the need for a broad-based multispecialty organization to serve as the nucleus of a vascular coalition. One of the resolutions reached was that the Vascular Disease Foundation could expand its current role and serve as the coalition organization under which common goals and objectives could be furthered. In addressing the summit participants, Dr. Eve Slater, assistant secretary of the Department of Health and Human Services, urged the group to speak with a single voice and to develop a unified message to successfully move forward.

The 2003 NHLBI workshop portion of the Public Education Strategy Meeting was, therefore, designed to support the Vascular Disease Foundation and its partners in taking the next step toward raising public awareness about vascular diseases in general and, more specifically, peripheral arterial disease.

THE PAD PUBLIC EDUCATION STRATEGY MEETING: CONSENSUS AT HAND

At the NHLBI Workshop on Developing a Public Awareness Campaign, Dr. Claude Lenfant, director of the NHLBI, outlined the need for public health messages to be anchored in a robust scientific evidence base. In addition, a national cardiovascular public educational program must devise messages that are inclusive of the needs of all segments of the public and should use methods known to reach the public at risk of PAD. The development of such messages to be used in any program of national scope requires the input of all vascular professionals, public advocacy groups, as well as organizations with expertise in communications and public relations. The need to maintain stepwise consensus in such a process was outlined by reviewing the creation of the successful "Heart Truth Campaign" (www.nhlbi.nih.gov/health/heartruth). The Heart Truth Campaign was created to increase the appreciation that in women, as in men, the leading cause of death is heart disease. The campaign's goal is to give women a personal and urgent "wake-up call" about their risk of heart disease. This campaign was based on the findings from the NHLBI Women's Heart Health Education Strategy Development Workshop held in March 2001, with the advocacy of organizations allying with Womenheart: The National Coalition for Women with Heart Disease (www.womenheart.org). More information is available from the resources listed in Appendix 3.

The role of the VDF, whose public and professional interdisciplinary structure provides a role for all national stakeholders, permitted the creation of a broad national vascular public educational coalition that led to the PAD Public Education Strategy Meeting. It was acknowledged that all of the vascular professional societies have considerable expertise in the evaluation, treatment, or rehabilitation of patients with PAD and that this unified expertise was invaluable in the creation of a national PAD education program. A summary of both prior and ongoing PAD-directed public screening and awareness programs is summarized in Table I. However, despite more than two decades of societal efforts in promoting public PAD awareness, most Americans remain unaware of the prevalence and risk of PAD. Thus, it is evident that in the absence of a unified national public awareness campaign, a broad segment of the population at risk will not hear the message, may hear disparate messages, or may become inured to messages whose efficacy is low.

Meeting objectives. This meeting was, therefore, designed to provide both a framework and tools for implementation of a public awareness campaign by the VDF, its members, as well as other collaborating organizations. The overarching goal was to define the next steps required to develop unified PAD-specific health messages. The specific meeting objectives included (1) creation of a set of science-based PAD messages, (2) provision of support to the vascular disease professional community representatives to develop a campaign to improve public awareness of PAD, (3) provision of a "hands on" workshop for meeting participants to demonstrate key tasks that underlie creation of a successful national awareness campaign, and (4) provision of an opportunity for the participants to develop a structural framework to continue future creation of a vascular disease public awareness campaign.

PAD messages and themes. To accomplish these tasks, the staff of the NHLBI was joined by the Ogilvy Public Relations Worldwide firm and moderated discussion by a panel of patients who helped define the perceived needs of those "at risk" and those with clinical PAD. The meeting participants, as individuals and in small groups, used these themes to create a common set of messages that would form the core of the public awareness campaign. These messages included the high prevalence of PAD and

its relationship to advancing age and atherosclerosis risk factors; the systemic nature of atherosclerosis and link between PAD and cardiovascular ischemic events (myocardial infarction, stroke, and death); the effect of PAD on quality of life, functional impairment, and limb loss; the ease of PAD diagnosis by use of the ankle-brachial index and other diagnostic methods; and the ability of many lifestyle, pharmacologic, endovascular, and surgical interventions to improve quality of life, decrease cardiovascular risk, and diminish the effect of critical limb ischemia and rates of amputation. The meeting participants developed a consensus that the lack of recognition of PAD by both patients and healthcare providers now results in delays in diagnosis and treatment, sustained high rates of heart attack and stroke, significant functional disabilities, limb loss, and death. A summary of these themes is presented in Table II and is outlined in more detail in the meeting summary NHLBI Workshop on PAD: Developing a Public Awareness Campaign. [37]

Table II. Rationale for creation of a national public PAD educational initiative: Science-based data underlie effective PAD public health messages

General PAD message	*Specific PAD data*
Prevalence is high	8–10 million Americans have PAD
Adverse outcomes are known	
Myocardial infarction and stroke	Increased 3 to 5-fold in individuals with PAD
High excess mortality	Increased 2- to 3-fold in individuals with PAD
Amputation	Primary cause of amputation in United States
Quality of life effect	Severe decrement in functional capacity; global decrease in quality of life
Patient awareness of PAD is low	Less than half of individuals with PAD are aware of their diagnosis
Physician awareness of PAD is low	PAD diagnosis is documented by less than one third of primary physicians
PAD is easily detected	ABI is a cost-effective PAD diagnostic method proven useful in office-based care, in the vascular laboratory, and at screening sites
Treatment efficacy is proven	
Cardiovascular ischemic event reduction	Tobacco cessation, lipid normalization, antihypertensive treatment, glycemic control, smoking cessation, and use of antiplatelet medications
Quality of life can be improved	Exercise, claudication medications; percutaneous and surgical therapies
Amputation can be averted	Tobacco cessation, percutaneous, and surgical therapies
Treatments are underused	Supervised exercise; smoking cessation, lipid-lowering, antihypertensive, and antiplatelet therapies; treatment (revascularization) of critical limb ischemia is often delayed

PAD, Peripheral arterial disease; *ABI,* ankle-brachial index.

NEXT STEPS ON A COMMON ROAD—A PROPOSAL TO CREATE A NATIONAL PAD PUBLIC AWARENESS CAMPAIGN

The unified goal of this meeting was to outline the rationale and steps required for creation of a national PAD public awareness campaign. The creation of a unified national action plan to improve national PAD awareness requires a common "guidebook". A meeting summary of the NHLBI Workshop on PAD: Developing a Public Awareness Campaign outlines core components of such a campaign as discussed by participants at the January 2003 meeting.[37] These core components include potential key PAD educational messages and methods to promote dissemination of these messages to all Americans at risk of or who have PAD. This summary includes the workshop presentations and the associated discussions, with a framework for creation of a national PAD educational program. From this outline, the Vascular Disease Foundation will continue its role in maintaining a broad, inclusive coalition of professional societies and public health organizations to develop a statement of work to be accomplished, to seek funding, and to create the national action plan.

SUMMARY

The PAD Public Education Strategy Meeting achieved a central goal that is common to our individual missions. As individual practitioners and as vascular professional societies, each of us has demonstrated a commitment to promotion of vascular health. Yet, what we have accomplished to date as individuals has not yet led to the effect we know we must achieve. Thus, in 2003, we have now achieved consensus that we share responsibility for development and dissemination of accurate, unified messages to promote PAD awareness and improved PAD care to all Americans at risk. We share a consensus that such messages, when commonly created and offered to the public, are most likely to achieve the rewards in better health that all Americans deserve.

This coalition has the capacity and intent to work as a partner of the NHLBI to develop, sponsor, and disseminate these messages. The Vascular Disease Foundation, a not-for-profit foundation whose mission includes public education about the prevention, diagnosis, treatment, and rehabilitation of PAD, will devote its resources to structure this process and to create a national PAD awareness campaign. During 2003 and 2004, the coalition will create the organizational underpinnings and time line for what will undoubtedly be a multiyear effort. If we are successful in

this first national PAD educational endeavor, then we surely will have created a template to continue for decades ahead, as we strive to accomplish our broader mandate to optimally improve global vascular health.

APPENDIX 3. KEY WEB-BASED RESOURCES

Vascular Disease Foundation: http://www.vdf.org/

American Vascular Association: http://www.vascularweb.org/

American Heart Association: http://www.americanheart.org/

Healthy People 2010: http://www.healthypeople.gov/

Heart Truth campaign: http://www.nhlbi.nih.gov/health/hearttruth/index.htm

Legs for Life program: http://www.legsforlife.org/

National Coalition of Women for Heart Disease: http://www.womenheart.org/

National Heart, Lung, and Blood Institute: http://www.nhlbi.nih.gov/

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REFERENCES

1. Criqui MH, Fronek A, Barrett-Connor E, Klauber MR, Gabriel S, Goodman D. The prevalence of peripheral arterial disease in a defined population. Circulation 1985;71:510-5.
2. Meijer WT, Hoes AW, Rutgers D, Bots ML, Hofman A, Grobbee DE. Peripheral arterial disease in the elderly. The Rotterdam Study. Arterioscler Thromb Vasc Biol 1998;18:185-92.
3. Fowkes FG, Housley E, Cawood EH, Macintyre CC, Ruckley CV, Prescott RJ. Edinburgh Artery Study: Prevalence of asymptomatic and symptomatic peripheral arterial disease in the general population. Int J Epidemiol 1991;20:384-92.
4. Leng GC, Lee AJ, Fowkes FG, Whiteman M, Dunbar J, Housley E, et al. Incidence, natural history and cardiovascular events in symptomatic and asymptomatic peripheral arterial disease in the general population. Int J Epidemiol 1996;25:1172-81.
5. Kornitzer M, Dramaix M, Sobolski J, Degre S, De Backer G. Ankle/arm pressure index in asymptomatic middle-aged males: An independent predictor of ten-year coronary heart disease mortality. Angiology 1995;46:211-9.
6. Zheng ZJ, Sharrett AR, Chambless LE, Rosamond WD, Nieto FJ, Sheps DS, et al. Associations of ankle-brachial index with clinical coronary heart disease, stroke and preclinical carotid and popliteal atherosclerosis: The Atherosclerosis Risk in Communities (ARIC) Study. Atherosclerosis 1997;131:115-25.
7. Newman AB, Sutton-Tyrrell K, Vogt MT, Kuller LH. Morbidity and mortality in hypertensive adults with a low ankle/arm blood pressure index. JAMA 1993;270:487-9.
8. Criqui MH, Langer RD, Fronek A, Reigelson HS, Klauber MR, McCann TJ, et al. Mortality over a period of 10 years in patients with peripheral arterial disease. N Engl J Med 1992;326:381-6.
9. Smith GD, Shipley MJ, Rose G. Intermittent claudication, heart disease risk factors, and mortality. The Whitehall Study. Circulation 1990;82:1925-31.
10. Vogt MT, Cauley JA, Newman AB. Decreased ankle/arm blood pressure index and mortality in elderly women. JAMA 1993;270:465-9.
11. Breek JC, Hamming JF, De Vries J, van Berge Henegouwen DP, van Heck GL. The impact of walking impairment, cardiovascular risk factors, and comorbidity on quality of life in patients with intermittent claudication. J Vasc Surg 2002;36:94-9.
12. Treat-Jacobson DT, Halverson SL, Ratchford A, Regensteiner JG, Lindquist R, Hirsch AT. A patient-derived perspective of health-related quality-of-life in peripheral arterial disease. J Nurs Scholarsh 2002;34:55-60.
13. Khaira HS, Hanger R, Shearman CP. Quality of life in patients with intermittent claudication. Eur J Vasc Endovasc Surg 1996;11:65-9.
14. Vogt MT, Cauley JA, Kuller LH, Nevitt MC. Functional status and mobility among elderly women with lower extremity arterial disease: The Study of Osteoporotic Fractures. J Am Geriatr Soc 1994;42:923-9.
15. Barletta G, Perna S, Sabba C, Catalano A, O'Boyle C, Brevetti G. Quality of life in patients with intermittent claudication: Relationship with laboratory exercise performance. Vasc Med 1996;1:3-7.
16. Pell JP, for the Scottish Vascular Audit Group. Impact of intermittent claudication on quality of life. Eur J Vasc Endovasc Surg 1995;9:469-72.
17. Ponte E, Cattinelli S. Quality of life in a group of patients with intermittent claudication. Angiology 1996;47:247-51.
18. McDermott MM, Mehta S, Greenland P. Exertional leg symptoms other than intermittent claudication are common in peripheral arterial disease. Arch Intern Med 1999;159:387-92.
19. McDermott MM, Mehta S, Liu K, Guralnik JM, Martin GJ, Criqui MH, et al. Leg symptoms, the ankle-brachial index, and walking ability in patients with peripheral arterial disease. J Gen Intern Med 1999;14:173-81.
20. McDermott MM, Fried L, Simonsick E, Ling S, Guralnik JM. Asymptomatic peripheral arterial disease is independently associated with impaired lower extremity functioning: The Women's Health and Aging Study. Circulation 2000;101:1007-12.
21. McDermott MM, Greenland P, Liu K, Guralnik JM, Criqui MH, Dolan NC, et al. Leg symptoms in peripheral arterial disease: Associated clinical characteristics and functional impairment. JAMA 2001;286:1599-606.
22. Dormandy JA, Rutherford RB. Management of peripheral arterial disease (PAD). TransAtlantic Inter-Society Consensus (TASC). J Vasc Surg 2000;31(1 pt 2):S1-S296.
23. Belch JJF, Topol EJ, Agnelli G, Bertrand M, Califf RM, Clement DL, et al. Critical issues in peripheral arterial disease detection and management: A call to action. Arch Int Med 2003;163:884-92.
24. Hirsch AT, Halverson SL, Treat-Jacobson D, Hotvedt PS, Lunzer MM, Krook S, et al. The Minnesota Regional Peripheral Arterial Disease Screening Program: Toward a definition of community standards of care. Vasc Med 2001;6:87-96.
25. Hirsch AT, Criqui MH, Treat-Jacobson D, Regensteiner JG, Creager MA, Olin JW, et al. Peripheral arterial disease detection, awareness, and treatment in primary care. JAMA 2001;286:1317-24.
26. Hiatt WR. Medical treatment of peripheral arterial disease and claudication. N Engl J Med 2001;344:1608-21.
27. CAPRIE Steering Committee. A randomised, blinded, trial of clopidogrel versus aspirin in patients at risk of ischaemic events (CAPRIE). Lancet 1996;348:1329-39.
28. The Heart Outcomes Prevention Evaluation Study Investigators. Effects of an angiotensin-converting–enzyme inhibitor, ramipril, on cardiovascular events in high-risk patients [Errata, N Engl J Med 2000;342:748, 1376]. N Engl J Med 2000;342:145-53.
29. MRC/BHF Heart Protection Study of cholesterol lowering with simvastatin in 20,536 high-risk individuals: a randomised placebo-controlled trial. Lancet 2002;:360:7-22.
30. Burt VL, Cutler JA, Higgins M, Horan MJ, Labarthe D, Whelton P, et al. Trends in the prevalence, awareness, treatment, and control of hypertension in the adult US population: Data from the health examination surveys, 1960 to 1991. Hypertension 1995;26:60-9.
31. Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, Izzo JL Jr, et al, and the National High Blood Pressure Education Program Coordinating Committee. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. The JNC 7 Report. JAMA 2003;289:2560-71.
32. Executive Summary of the Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation

and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). JAMA 2001;285:2486-97.
33. Pieper RM, Arnett DK, McGovern PG, Shahar E, Blackburn H, Luepker RV. Trends in cholesterol knowledge and screening and hypertension awareness and treatment, 1980-1992. The Minnesota Heart Survey. Arch Intern Med 1997;157:2326-32.
34. Farquhar JW, Fortmann SP, Flora JA, Taylor CB, Haskell WL, Willian PT, et al. Effects of communitywide education on cardiovascular disease risk factors. The Stanford Five-City Project. JAMA 1990;264:359-65.
35. Frank E, Winkleby MA, Fortmann SP, Rockhill B, Farquhar JW. Improved cholesterol-related knowledge and behavior and plasma cholesterol levels in adults during the 1980s. JAMA 1992;268:1566-72.
36. Fortmann SP, Flora JA, Winkleby MA, Schooler C, Taylor CB, Farquhar JW. Community intervention trials: Reflections on the Stanford Five City Project experience. Am J Epidemiol 1995;142:576-86.
37. NHLBI Workshop on Peripheral Arterial Disease (PAD): Developing A Public Awareness Campaign Meeting Summary. Bethesda, Md: U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung and Blood Institute, 2003.

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